

In the Claims

1-56 (Canceled).

57. (Previously Presented) A method of isolating RNA from a biological sample of a human or animal subject comprising an oligo- or polynucleotide from a sample comprising the steps of:

(a) treating the sample with a reactant capable of covalently modifying the 2'-OH position of the ribose rings of the RNA under conditions so that a proportion of the 2'-OH positions of the ribose rings bear a substituent; and

(b) preparing isolated RNA therefrom by separating material containing the substituent from the sample on the basis of a property of the substituent.

58. (Previously Presented) The method according to claim 57, wherein:

(a) step (a) of Claim 1 is carried out in a reaction medium which comprises an organic solvent, and optionally wherein said organic solvent comprises an organic base, and further optionally wherein said reactant comprises an acid anhydride, an acid chloride, a carboxylic acid or an N-acylimidazole, and further optionally wherein said reaction medium further comprises an acylation catalyst, and further optionally wherein said the reaction medium further comprises water;

(b) said RNA comprises mRNA, rRNA or viral RNA;

(c) said sample comprises a sample from a biological source;

(d) said sample includes DNA;

(e) said substituent comprises a solid phase, and optionally wherein said solid phase comprises benzoyl chloride polymer bound (BCPB) beads, silica particles or particles of a glass, and further optionally wherein said solid phase is modified to introduce a reactive group which reactive group is capable of reacting with RNA to capture the RNA on the solid phase, and further optionally wherein said reactive group is introduced by modifying the solid phase with a bi-functional acid halide;

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(f) said substituent comprises a hydrophobic substituent, and optionally wherein said hydrophobic substituent comprises a substituent, OR, wherein R is selected from the group consisting of: C₁-C₃₆ alkyl; C₁-C₃₆ alkenyl; C₁-C₃₆ alkynyl; C₁-C₃₆ haloalkyl; C₁-C₃₆ aminoalkyl; C₁-C₃₆ alkoxyalkyl; C₁-C₃₆ alkylthioalkyl; C₁-C₃₆ alkoxyalkoxyalkyl; C₁-C₃₆ haloalkoxyalkyl; C₁-C₃₆ aminoalkoxyalkyl; C₆-C₃₆ aryl; C₆-C₃₆ alkylaryl; C₆-C₃₆ arylalkyl; C₆-C₃₆ arylalkenyl; C₁-C₃₆ alkanoyl; C₁-C₃₆ alkenoyl; C₁-C₃₆ haloalkanoyl; C₁-C₃₆ haloalkanoyl; C₂-C₃₆ haloformylalkanoyl; C₁-C₃₆ C₁-C₃₆ aminoalkanoyl; C₁-C₃₆ azidoalkanoyl; C₁-C₃₆ carboxyalkanoyl; C₁-C₃₆ carboxyalkenoyl; C₁-C₃₆ carboxyalkynoyl; C₁-C₃₆ alkylaminoarylalkanoyl; C₁-C₃₆ alkoxycarbonyl; C₁-C₃₆ alkenyloxycarbonyl; C₁-C₃₆ alkylsulfonyl; C₆-C₃₆ arylalkanoyl; C₆-C₃₆ arylalkenoyl; C₆-C₃₆ aryloxyalkanoyl; C₆-C₃₆ alkylarylalkanoyl; C₆-C₃₆ haloarylalkanoyl; C₆-C₃₆ aminoarylalkanoyl; C₁-C₃₆ alkylsilanyl; C₁-C₃₆ trialkylsilanyl and C₁₂-C₂₈ diarylphosphano; or a substituent R', wherein R' comprises C₁-C₃₆ alkyl; C₁-C₃₆ alkenyl; C₁-C₃₆ alkynyl; C₁-C₃₆ haloalkyl; C₁-C₃₆ aminoalkyl; halo; amino; C₁-C₃₆ alkylamino; C₆-C₃₆ aryl; C₁-C₃₆ alkylaryl or C₁-C₃₆ arylalkyl;

(g) said hydrophobic substituent of (f) comprises a C₄ to C₇ carbon chain or ring;

(h) wherein said reactant comprises butyric anhydride, pentanoic anhydride, hexanoic anhydride or benzoic anhydride;

(i) said proportion of 2'-OH positions bearing the substituent is at least 10%;

(j) said hydrophobic substituent of (f) comprises a C₈-C₁₂ carbon chain or ring, and optionally wherein said proportion of 2'-OH positions bearing the substituent is in the range 1 to 10%;

(k) said hydrophobic substituent of (f) comprises a C₁₂-C₃₆ carbon chain or ring, and optionally wherein said proportion of 2'-OH positions bearing the substituent is up to 1%;

(l) said step (b) comprises contacting the treated sample from step (a) with a hydrophobic solid phase so as to bind the material containing the hydrophobic substituent and optionally washing the material bound to the solid phase, and optionally wherein said hydrophobic solid phase comprises hydrophobic particles, and further optionally wherein said method further comprises a step of eluting the material bound to the hydrophobic solid phase by treating with a detergent, a chaotrope or a solvent, by lowering the salt concentration or by cleaving the substituent from the 2'-OH position of the ribose rings;

(m) said step (b) comprises the further step of treating the treated sample from step (a) with a lyotropic salt to aggregate the material containing the hydrophobic substituent as an RNA precipitate, and isolating the precipitate, and optionally wherein said lyotropic salt comprises ammonium sulphate, an alkali metal chloride, magnesium chloride or calcium chloride; or

(n) said step (b) comprises treating the treated sample with a non-polar solvent to form a hydrophobic liquid phase which contains the material containing the hydrophobic substituent, and isolating the hydrophobic liquid phase, and optionally wherein said non-polar solvent comprises pentane, cyclohexane, toluene, benzene, light petroleum, xylene or hexane.

59-63. (Canceled)

64 (Previously Presented). A preparative method for isolating RNA comprising an oligo- or polynucleotide from a biological sample of a human or animal subject, which method comprises:

(a) collecting a biological sample of blood, cells, tissue or body fluids containing RNA;

(b) treating the sample with a reactant capable of covalently modifying the 2'-OH position of the ribose rings of the RNA under conditions so that a proportion of the 2'-OH positions of the ribose rings bear a substituent; and

(c) isolating the RNA that has been modified at the 2'-OH position from the sample.